

REMARKS

Claims 3-20 are all the claims presently pending in the application. Claims 3-9 and 11-19 have been amended to more particularly define the invention. Claims 1 and 2 have been canceled. Claim 20 has been added to provide more varied protection for the invention.

It is noted that the claim amendments are made only for more particularly pointing out the invention, and not for distinguishing the invention over the prior art, narrowing the claims or for any statutory requirements of patentability. Further, Applicant specifically states that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

The Examiner alleges that “[t]he term ‘multistageously’ . . . is not a term known in the art and the scope of the term is unclear in view of the applicant’s disclosure” (Office Action at page 2, last paragraph).

MPEP 2173.02 provides that the claims need only define the patentable subject matter with a reasonable degree of particularity and distinctness. Further, definiteness of claim language must be analyzed in light of (A) The content of the particular application disclosure; (B) The teachings of the prior art; and (C) The claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made.

In view of the above, we respectfully disagree with the Examiner’s allegation. We would respectfully submit that the term “multistageously” is clearly defined in the specification from page 17, line 18 to page 22, line 14 in conjunction with Figures 4-8. We would further submit that one of ordinary skill in the art would clearly be able to understand the term “multistageously” as is defined in the aforementioned portion of the specification and drawings.

Claims 3 and 5 stand rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by Hideyuki, et al. (Japan Publication No. 63-113189).

Claims 4 and 6 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Hideyuki, as applied to claims 3 and 5, in view of Meza, et al. (U.S. Patent No. 7,083,392).

These rejections are respectfully traversed in the following discussion.

I. THE CLAIMED INVENTION

An exemplary aspect of the claimed invention (e.g., as recited in claim 3) is directed to an air compressor, including a tank portion for reserving compressed air used in a pneumatic tool, a compressed air generation portion for generating compressed air and supplying the compressed air to the tank portion, a drive portion including a motor for driving the compressed air generation portion, and a control circuit portion for controlling the drive portion. The control circuit portion includes a unit for calculating internal pressure P of the tank portion based on a detection signal output from a pressure sensor, calculating a rate $\Delta P/\Delta T$ of pressure change ΔP to time ΔT , and deciding a rotational speed of the motor based on the pressure P and the rate $\Delta P/\Delta T$ of pressure change ΔP .

Conventional air compressors are often used portably for powering pneumatic tools. However, the conventional compressor possesses drawbacks that make them difficult and inconvenient to use. A conventional air compressor is noisy, and the tool the compressor is powering is often noisy. The noise of the two instruments combined can create difficulties working in environments where a noise level is restricted to a certain amount. Also, the conventional compressor is sometimes used in remote locations, which can cause power supply issues, especially in situations where the compressor being used lacks efficiency. Further, the temperature of the conventional compressor can grow very high during use, causing subsequent efficiency disturbances (Application at page 1, line 11 to page 4, line 12).

An exemplary aspect of the claimed invention, on the other hand, includes an air compressor where the control circuit portion includes a unit for deciding a rotational speed of the

motor based on the pressure P and the rate $\Delta P/\Delta T$ of pressure change ΔP (Application at page 17, line 18 to page 22, line 14 and Figures 4-8). This feature may provide an air compressor that achieves a low-noise operation when a small amount of air is used (Application at page 5, lines 6-12).

II. THE PRIOR ART REJECTIONS

A. The Hideyuki Reference

Hideyuki discloses a pumping device (Hideyuki at Abstract). The Examiner alleges that Hideyuki anticipates the invention of claims 3 and 5. However, Applicant respectfully submits that Hideyuki clearly fails to teach or suggest all of the elements of the claimed invention.

Specifically, Hideyuki fails to teach or suggest an air compressor “wherein the control circuit portion comprises a unit . . . deciding a rotational speed of said motor based on the pressure P and the rate $\Delta P/\Delta T$ of pressure change ΔP ”, as recited, for example, in claim 3 (Application at page 17, line 18 to page 22, line 14 and Figures 4-8). This feature may provide an air compressor that achieves a low-noise operation while also having an effect of improving the power supply (Application at page 5, lines 20-22).

The Examiner alleges that Hideyuki teaches the aforementioned feature at Figures 6 and 7. However, Applicant respectfully disagrees. Figures 6 and 7 of Hideyuki clearly fail to teach or suggest an air compressor where the control circuit portion further includes a unit for deciding a rotational speed of the motor based on the pressure P and the rate $\Delta P/\Delta T$ of pressure change ΔP . In fact, Hideyuki only teaches $\Delta P/\Delta T$ and fails to teach the pressure P and the rate $\Delta P/\Delta T$ of pressure change ΔP .

Further, Applicant respectfully submits that the Examiner fails to particularly point out how the invention of claims 3 and 5 are anticipated by Hideyuki. The Examiner fails to explain the significance of Figure 6 and 7 with respect to the invention of claims 3 and 5. Applicant

submits that Figures 6 and 7 of Hideyuki are not enough to teach or suggest all elements of the invention of claims 3 and 5.

Again, Applicant respectfully reminds the Examiner that the claims are to be applied in light of the specification. When the claims are applied in light of the specification, as the Examiner is required to do by the MPEP, it is clear that Hideyuki – in its entirety – fails to teach or suggest the controlling of a rotational speed of a motor of an air compressor.

In addition, Applicant notes that the Examiner appears to possibly be relying on an English language translation of the Hideyuki reference. If so, Applicant requests that the Examiner provide Applicant with a copy of the English language translation. However, if the Examiner is not relying on an English language translation of the Hideyuki reference, Applicant submits that Figures 6 and 7 are not enough without any other sort of teaching or suggestion to reject the invention of claims 3 and 5.

Therefore, Applicant respectfully requests the Examiner to reconsider and withdraw this rejection.

B. The Meza Reference

To make up for the deficiencies of Hideyuki with respect to the invention of claims 3 and 5, the Examiner applies Meza. Meza discloses a method and apparatus for a pump and a pump control system (Meza at Abstract). The Examiner alleges that combining Hideyuki and Meza would make the invention of claim 4 and 6 obvious.

However, even assuming (arguendo) that one of ordinary skill in the art would combine Meza with Hideyuki, the resultant combination would still fail to teach or suggest all the features of the invention of claims 4 and 6.

Specifically, Meza fails to teach or suggest an air compressor “wherein the control circuit portion comprises a unit . . . deciding a rotational speed of said motor based on the pressure P

and the rate $\Delta P/\Delta T$ of pressure change ΔP ", as recited, for example, in claim 3 (Application at page 17, line 18 to page 22, line 14 and Figures 4-8). This feature may provide an air compressor that achieves a low-noise operation while also having an effect of improving the power supply (Application at page 5, lines 20-22).

The Examiner alleges that column 16, line 60 to column 17, line 3 of Meza teaches that "it is well known in the art to use memory such as a computer hard disk to store pertinent data in control system in order to retrieve the data for operation of the control system.

However, Meza clearly fails to teach or suggest an air compressor that decides a rotational speed of the motor based on the pressure and the rate of pressure change. Thus, Meza is unable to make for the aforementioned deficiencies of Hideyuki pointed out in Section B.

Therefore, Applicant respectfully requests the Examiner to reconsider and withdraw this rejection.

III. NEW CLAIMS

New claim 20 has been added to claim additional features of the invention and to provide more varied protection for the claimed invention. This claim is independently patentable because of the novel and nonobvious features recited therein.

Applicant submits that the new claim is patentable over the cited prior art references at least for analogous reasons to those set forth above with respect to claim 3.

IV. FORMAL MATTERS AND CONCLUSION

To the extent necessary, Applicant petitions for an extension of time under 37 C.F.R. § 1.136.

In view of the foregoing, Applicant submits that claims 3-20, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition

for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

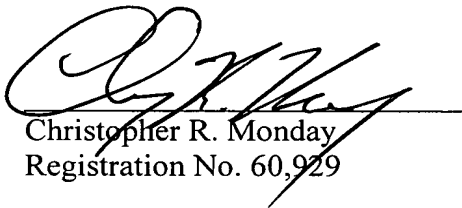
Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

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